

We claim:

1. A method for forming a protein and carotenoid product, comprising the steps of:
  - (a) preparing a solution of a carotenoid in a solvent;
  - (b) adding a source of metal ions;
  - (c) adding a source of protein; and
  - (d) incubating the solution.

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2.

A method as defined in claim 1, wherein the carotenoid comprises esters of hydroxyl- or carboxyl-containing carotenoid.

3.

A method as defined in claim 1, wherein the carotenoid is selected from the group comprising actinioerythrol, astaxanthin, bixin, canthaxanthin, capsanthin, capsorubin, -8'-apo-carotenal (apo-carotenal), -12'-apo-carotenal, -carotene, -carotene, "carotene" (a mixture of - and -carotenes), -carotene, -cryptoxanthin, lutein, lycopene, violerythrin, zeaxanthin, and esters of hydroxyl- or carboxyl-containing members thereof.

4.

A method as defined in claim 1, wherein the carotenoid comprises xanthophylls and esters of hydroxyl- or carboxyl-containing members thereof.

5.

A method as defined in claim 1, wherein the metal ions are selected from the group comprising  $Mg^{++}$ ,  $Mn^{++}$ ,  $Fe^{+++}$ ,  $K^+$ , and  $Ca^{++}$ .

6.

A method as defined in claim 1, wherein the solvent is selected from the group comprising tetrahydrofuran, methanol, ethanol, propylene glycol, methylene chloride, and isopropyl alcohol.

7.

A method as defined in claim 1, wherein the protein source is selected from the group comprising soybean proteins and isolates; albumin from various sources (i.e., bovine and chicken); whey proteins, concentrates and isolates; isoflavone containing protein products; corn germ proteins; oat flour; soybean proteinase inhibitors, comprising Kunitz, Bowman-Birk, and carboxypeptidase inhibitors; potato proteinase inhibitors and others; and hydrolyzed vegetable proteins.

8.

A method as defined in claim 1, further comprising the step of drying to form a dry product containing the protein and carotenoid product.

9.

A method for forming a protein and carotenoid product, comprising the steps of:

- (a) adding a carotenoid to a protein-containing mixture that also contains a source of metal ions; and
- (b) incubating and heating the mixture.

10. A composition of a carotenoid and a protein, comprising a product formed by the method of claim 1.

11. A personal care composition, comprising a carotenoid and protein product of claim 10 added to a personal care product.

12. A beverage composition, comprising a carotenoid and protein product of claim 10 added to a beverage.

13. A food composition, comprising a carotenoid and protein product of claim 10 added to a food.

14. A composition of a carotenoid and a protein for addition to a food, beverage, or personal care product, comprising a product formed by the method of claim 1.

15. A method of supplementing a food, beverage, dietary supplement, or personal care product with a protein, a carotenoid, or both, comprising the step of adding to a food, beverage, or personal care product a carotenoid and protein product formed by the method of claim 1.